

REMARKS

Reconsideration and allowance in view of the foregoing amendment and the following remarks are respectfully requested.

Claims 1-14 are now pending. Claims 11 and 12 have been withdrawn from consideration as directed to a non-elected invention.

It is noted that an Information Disclosure Statement was filed with this application on February 6, 2002. However, an initialed and dated copy of the PTO Form 1449 that accompanied that Information Disclosure Statement has not been returned to the undersigned. Please check the subject application file and return a copy of the initialed and dated form PTO-1449 with the next Official Communication. If the Information Disclosure Statement has become separated from the Examiner's file, it is respectfully requested that the undersigned be contacted so that a duplicate copy of the Information Disclosure Statement can be submitted with proof of filing and the listed documents timely considered.

It is noted that formal drawings were filed in response to Notice File Corrected application Papers on March 28, 2002. It is respectfully requested that the Examiner acknowledge that the formal drawings are acceptable and have been entered in the file.

Original claims 1, 2, 4, 5, 7, and 10 were rejected under 35 USC 102(b) as anticipated by Osamura et al. Applicant respectfully traverses this rejection.

Anticipation under Section 102 of the Patent Act requires that a prior art reference disclose every claim element of the claimed invention. See, e.g., Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1574 (Fed. Cir. 1986). While other references may be used to interpret an allegedly anticipating reference, anticipation must be found in a single reference. See, e.g., Studiengesellschaft Kohle, G.m.b.H. v. Dart Indus., Inc., 726 F.2d 724, 726-27 (Fed. Cir. 1984). The absence of

any element of the claim from the cited reference negates anticipation. See, e.g., Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 715 (Fed. Cir. 1984). Anticipation is not shown even if the differences between the claims and the prior art reference are insubstantial and the missing elements could be supplied by the knowledge of one skilled in the art. See, e.g., Structural Rubber Prods., 749 F.2d at 716-17.

The present invention is characterized *inter alia* in that a noble metal chip working as a thin electrode is laser welded to a ground electrode in order to ensure the reliability of welding of the chip to the ground electrode, which is inferior to the center electrode in heat dissipation and apt to be elevated in temperature. Note in this regard that claim 1 characterizes the noble metal member as having the first end thereof joined to the surface of the ground electrode that is opposed to the center electrode so that the second end of the noble metal member is opposed to the tip of the center electrode through a spark gap. Similarly, claim 5 characterizes the noble member member as embedded in the end surface of the ground electrode and joined to it by laser welding.

In contrast to the invention claimed in claim 1 and claim 5, the noble metal chip 52 fixed to facing portion 4a of the ground electrode of Osamura is fixed thereto by resistance welding, not by laser welding. See in this regard column 5, lines 43-45. The only structure taught as laser welded in Osamura is the noble metal chip that is laser-welded to the central electrode. See in this regard column 5, lines 33-39 of Osamura. Thus, Osamura is clearly different from and does not anticipate independent claim 1 or independent claim 5 of this application.

The invention as defined in claim 1 is also characterized in that the laser beam is irradiated from an oblique direction to an interface between the noble metal member and the ground electrode to form the fused portion, and the melt angle is specified to ensure the reliability of welding of the noble metal member to the ground electrode. As

noted above, Osamura does not teach laser welding the chip to the ground electrode. Moreover, Osamura et al. is silent about the orientation of the laser beam used to secure the noble metal member to the central electrode.

In summary, the noble metal chip connected to the ground electrode in Osamura is connected thereto by resistance welding. The only embedding and laser welding taught by Osamura is in connection with the center electrode, as Osamura teaches that a noble metal chip is embedded in the center electrode and welded with a laser. New dependent claims 13 and 14 even further detail the structures of the central and ground electrode of a spark plug according to the invention, thus further differentiating the claimed invention from the Osamura disclosure.

It is respectfully submitted that none of the claims presented is anticipated by nor obvious from Osamura.

Claims 3, 6, 8 and 9 were rejected under 35 USC 103(a) as unpatentable over Osamura et al in view of Matsutani. Applicant respectfully traverses this rejection. These claims are submitted to be distinct from Osamura for the reasons advanced above. Indeed, Osamura teaches attaching his noble metal chip 52 to the ground electrode using resistance welding so that Osamura does not anticipate nor render obvious the subject matter of these claims.

Matsutani does not overcome the deficiencies of Osamura noted above. In this regard, the fused portion in Matsutani is a fused portion where the noble metal tip is fused to the center electrode and thus includes no teaching in any way relevant to the claimed invention.

Thus, even if Osamura were modified in view of Matsutani, the invention recited in applicant's claims would still not be anticipated nor obvious because the combined teachings would be directed solely to the laser welding of a noble metal chip to a center electrode and the associated fused portion and would not be relevant to the subject

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matter of applicant's claims. It is further respectfully noted that Matsutani, like Osamura is silent about the orientation of the laser beam and melt angle and thus is further deficient in that respect.

For all the reasons advanced above, reconsideration and withdrawal of the Examiner's rejection is requested.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

Respectfully submitted,

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